

Lansing, Kas
Muscatine M.
Davenport

St. Joseph, Mo. ¹⁹⁰³

W. S. W. of Iowa City.

Iowa City

DOCKET
J. Scott & Co. 1904
NOTES

Aug. + Nov. 1903.

across Missouri
El Paso
Alpine

M

B. Shinnick
Iowa City
Iowa

200

800

Trip to El Paso, etc.

Left Iowa City at 6.³⁷ PM.

Wednesday, Aug. 26 - 1903.

Went to Cedar Rapids, & there
attended meeting of Council of
Higher Education.

Aug. 27. Thurs.

Left Cedar Rapids at
3.³⁵ AM, Collected at Columbus Ia. 7 AM.

Left Columbus Ia. at 9.²⁰ AM
Rained all night & much of
day.

From Liville to Almond in
Iowa, could see yellow loess
with paler (whitish) parts.
(Which also appears in Davis, Appanoose
& Wayne cos. in Iowa) are these
loess? In places near Almond, the
drift comes near to surface, - loess
is thin. The topography from
Liville to Almond is typical
Kansan - rolling

Below Alton, near Grand
river a cut shows rock,
limestone capped with thin
shale coming almost to
surface - almost no drift &
no loess.

(Between Alton & Corydon
down any flat prairie -
not rolling - Kansas)
After crossing Grand
river ^{by a bridge} cut showed red
gess-like drift, -

(Corydon's nature is a view
which in S. Iowa & N. Mo.
takes possession of whole
fields)

Beyond Weston yellow
loess-like drift, with few
& small gravel, & very
little if any loess.

Topography of the
river valley - rolling -
Kansas.

Beyond Alton and until
is reached the country
is not very rolling, - gentler
than is the rule with the
Kansas. Exposed show
some loess & yellow loess-like
drift with small pebbles.
At Cameron there is under
the upper yellow loess a
whitish layer - loess also.
The first country extent
to within a couple of
miles N. of first station
below Lathrop (Kearney)

The hills then gradually
appear - but it was not for some
time that we reached real hills -

That drift? (yellow) may
be something else. - This
whole region doesn't look
like Kansas at all.

Aug. 28 - Fri.

We left Kansas City
at 11 P.M. last night, & awoke at Durham, Kas.
at about 6²⁵ AM, - the
train being due at 9:37 AM.
The country a great
open plain, but farms
looking well, groves here &
there - mostly small.
Cottonwood, box elder, some
sycamores & some fruit trees -
mostly apples - fair small
Central Kansas.

At McPherson fair looking
park (too) with medium sized
trees, San Ailanthus, Box
Maple, box elder - Catalpa
Cottonwood.

Between Medora and
Hutchinson are sand dunes,
some still bare & shifting -
especially on NW. side of RR.
They are rounded, & typical

sand dunes.

Hutchinson, a city of over 3000
shows numerous shade trees. The
Boys' Reform School located here
has a nice young park started.
The Arkansas river is like
the Platte on a smaller scale.
The banks are low, - no bluffs,
and the stream is broken up
into channels between sandbars.
The sand hills N. & E. are probably
from river.

Between Partridge & Langdon
there were few shallow cuts
& there show some reddish
gravelly material that was
under loess in Wisconsin.

Wherever a pool or swampy
spot occurs in this dry
plain Cat tails, sedges, &
aquatic plants generally, appear.
Involuntarily some of the corn
looks pretty well, but near
Hutchinson a deal of it

was stunted, & twisted.
Just beyond Greenbury
appeared dune-like
hills N.W. from RR -
but covered with vegetation
all through this dry
season the plants are
small & vegetation is
more or less tufted.

Near Ashalon we crossed
the Cimarron river, a small
stream with bars. There
are sand bars on N. side
especially, & the country is
desert like, with sage brush, Yucca,
Mentzelia, etc. - the white
deposit is prominent.
The sand bars are partly
covered with vegetation - mostly,
saw jack rabbits & prairie dogs
in many places.
The country near the river,

both sides, - is rougher for
some distance, - but sand dunes
are noticeably on N. side.
Mirages appeared most of
the day.

Beyond Optima crossed
N. fork of Canadian. Country
again rougher, & somewhat
dune-like, or butte-like on
N. side. Desert.

Valley green. Plain gray.
Beyond Dalhart Tex
saw three antelopes.
At Sand Springs
and from there on were
numerous sand hills & ridges.
Partly covered with vegetation
& partly shifting & showing
wind ripples. Some are
sharp. The vegetation is
everywhere tufted.
We crossed the Canadian
a little beyond Logan.
The river has a very narrow

deep gorge, cut in rock.
The water appears only
in narrow channels, & a
small Platte, - the bed
of valley being sand.
Sandbars extend from
bluff to bluff with little
interruption.

Aug. 29 - Sat.
Awakened at Temporal.
From there on we traveled
through desert - sage brush, sand,
some yucca, etc.
Mountains low to east of us
rather near, - to west higher
range, - distant.
Occasionally a shack or
even house & windmill &
then a few small trees, etc.
At Tularosa there is a
short row of Lombardy poplars.
At Alamogordo there is a nice
park, blue grass, clover, etc.
Trees mostly cottonwood, - some
Lombardias - a man by there
is some corn, - rather scant, - but
what there is looks well.
Curious - on the east side
of track a nice fresh looking
park & a thriving grove, & on west
side a sage-bush covered desert
of which I took two pictures - 13 & 14.

Vegetation varies. Below
Alamogordo there are places
where yuccas come in
thick, - again sage brush,
etc.

Mesquits are next Alamogordo
all around Escondido is
a great Yucca forest,
with sage brush, a few
mesquits, a bunch grass, etc.
Numerous large hawks fly
over plain.

Spent an hour at Juarez in
Mexico and in afternoon went
up toward the Smelters where
there are desert conditions.

The Rio Grande has a
current here, & below may
be crossed dry about

At 8 P.M. took So. Pacific
for Alpine, which we reached
at 5¹⁰ next morning.

Aug. 30 - Sunday.
Stopped at Granmont hotel,

Drove in forenoon to mts. So.

& collected many plants.

In afternoon repeated the
drive with renewed success.
Left at 10¹⁸ P.M. & reached El Paso
at 7 A.M. Aug. 31, Mon.

Got a room at
the New Commercial for changing
drives, etc. Sent one basket
home, changed drives, and
plants in press.

Left at 8⁰⁰ P.M. for
Alamogordo which we
reached at about 10³⁵ P.M.
Put up at Alamogordo
Hotel, - room 25

Sep. 1 - Tuesday
 Changed dinner & P.M. "went
 out over desert eastward
 to foot of mountains, -
 about 4 miles away.
 Collected a lot of plants,
 yucca, cactus, ferns, etc.
 In evening, pressed plants.

Sep. 2 - Wednesday.
 Changed dinner early.
 We left at 8:30 AM. for
 Cloudcroft. A delightful
 ride through splendid
 mountain scenery. Prof. MacG
 pronounced it finest in
 America.
 Reached Cloudcroft at
 about noon - delayed.
 Put up at Virginia Hotel, -
 1.50 per day. Only hotel
 now open. The Cloudcroft
 Lodge, - the small place, -

was already closed.
 The "season" is from
 June 1 to Sep. 1.
 Collected plants P.M. Also
 mails.

Sep. 3 - Thursday.
 Philip and I walked down
 the RR. cañon to Highrolls.
 I collected many plants, -
 Yucca, etc.
 Reached Alamogordo at
 8:30 P.M., about 2 hrs. late.
 Put plants away.

Sep. 4 - Friday
 Pressed plants, etc. early.
 Toward evening went out to
 mt. east. Found yucca, etc.

Sep. 5 - Saturday

Packed early.

Went to Highrolls & walked
down Box Canyon. A rough,
picturesque region.

Had fair success with plants
& snails. Walked into
Alamogordo.

Packed & left at about
1 A.M. for the north.

Prof. Mearns & Philby were
at Desert all day, & were
on train.

The Alamogordo Hotel is
managed by Mr. Arnold,
a Milwaukeean whose
daughter-in-law has a sister
who is sister-in-law to
J. C. Kaul of Milwaukee.

Sep. 6 - Sunday

Wrote a couple of letters
below Santa Rosa.

The upper part of the desert
is more tree-covered, - mostly
cedar & some Pinus. It
extends to a little beyond

Santa Rosa. Northwest the
desert is grass-covered &
is like the great plains.

Below Santa Rosa are
mesas, - no real mountains.
There is some of red rock

to S.E. - appears on

Saw the big Cucurbit
as far north as N. of
Lodi, Kas.

1903

Sep. 7

From Tzupila to Kouras by the
 RR, runs along the side
 of Kouras river. There
 are bluffs on the N.
 side - with loess -
 At Kouras City the whole
 blue valley was filled
 with a fine dust. The
 wind was only moderate &
 nearby one could see
 no dust in the air but
 at a little distance everything
 was hazy, & finally
 disappeared in a cloud.
 On the north side of
 the Missouri river are
 sand bars with slight
 sandstone terraces, where
 vegetation took a hold.
 The Kouras is also a
 sand bar stream, but
 near Tzupila and
 no bar as others.

20

| | |
|--|------|
| Nov. 18. Hack | .25 |
| Breakfast. Columbus Jr. | .50 |
| Nov. 18 Meals 50 + 70 | 1.20 |
| Nov. 19 Meals 50 + 50 + 55 | 1.55 |
| Sleeper to Alamo | 2.50 |
| Nov. 20. Breakfast at Santa Rosa | .50 |
| Lunch ³⁵ Pies ⁵ , Cup ⁵ shoes ⁴⁰ Carfare ¹⁰ | .95 |
| Nov. 21 Lunch. 50 Wine ⁵ | |
| Nov. 22 Breakfast & lunch ^{1.00} Paper ^{.05} | |
| Nov. 23. Breakfast & lunch ⁶⁵ | |
| Nov. 24 Hotel ^{6.00} | |
| El Paso. Plates ⁵⁵ , lunch ³⁰ Carfare ¹⁰ Haircut ⁵⁰ | |
| Cards ²⁵ , stamps ¹⁵ , shoes ³⁰ Parcels ²⁰ | |
| Lunch ⁵⁰ paper ⁵ Supper ³⁵ | |
| McPherson - Hotel ^{1.00} lunch ²⁵ | |
| Salina - paper ⁵ dinner ²⁵ | |
| Kansas City - lunch ³⁰ car ⁵ | |
| Car to Loring ⁴⁰ to Lawrence ²⁰ | 60 |
| Fare to St. Jo, | 1.35 |
| Fare to Des Moines | 4.75 |
| Room & board | 1.00 |
| Lunch ²⁰ paper ¹⁰ , check bag ¹⁰ | 30 |
| Borrowed 12 from Banner, at Des Moines 8.00 | |

Nov. ²¹ 1903

Left home Wednesday
at 1.48 AM. (or rather about
2.00), Nov. 18 - 1903
Waited at West Liberty
until 8³⁰ AM and at
Columbus Jr. until 10³⁰ AM.
Round trip to El Paso \$31.50.
The Kansas City & El Paso train
consists of 13 coaches and
was very slow.
Left Kansas City about
3 AM. Nov. 19., & kept
losing time. At Bucklin,
Kas. The train was divided,
the sleepers being run through,
and the rest of train forming the
local. We should have
left Bucklin at 10³⁰ AM,
but really left at 5.30 + 5 P.M.,
7 hrs. and ^{15 min.} ~~00~~ minutes behind
time.
The train was loaded with tourists
& the worst sleepers were abundantly
tenanted by invalids.

We were also delayed by a freight wreck.

We were due at Meade at 11.55 AM. but left there at 7.32 PM., or 7 hrs. and 37 minutes behind time.

Due at Arkalon at 1 PM., reached it at 8.35 PM. (7.35 hr. late)

Engine broke down at night.
Result: Left Santa Rosa at 8.48 AM. instead of 11.20 PM., last night, - just 9 hrs. & 8 min. late. And the two sections are again joined! This is the "saving" of 3 or 4 hrs. time! Was there ever such a sell?!

21.4
2.8
23

Saw Nut Pine in rather rough rocky region below Pintado. Also Red Cedar, shrubby oaks, Cholla, very strong Opuntia etc. The cholla look dull & dead, but have fruit. Closer inspection shows them to be green, but dull. Left Marino at 11.06 AM. 9 hrs. & 46 min. behind.

Near Marino there is a lot of Red Cedar with considerable nut pine. At Trinchera 9 hrs. 48 min. late at Torrence 9 " 47 " " Below Torrence a lot of red cedar & nut pine in narrow part of valley. The slopes are also covered.

I should say this was about same horizon as above High Rolls to Wooten - The cedars are covered with mistletoe.

24

The highest point is
6666 ft above the sea.

Alamogordo = 4312 ft.

El Paso - 3700 ft.

at Corona 9 hrs. 48 min. late

at Salinas 10 hrs. 3 min. "

at Tecolote 10 " 7 " "

at Ancho 10 " 3 " "

at Coyote 9 " 54 " "

at Carrizozo 9 " 45 " "

at Oscura 9 " 35 " "

Reached Alamogordo at 3:30 P.M.

Put up at Alamogordo Hotel.

Saw Mr. Banner & Mr.

E. J. Dedman of the R.R. Got

transportation to Cloudcroft &

arranged with Mr. Banner's

brother-in-law to go out two days.

Saturday Nov. 21 train from H. was 20 hrs. late

Sunday " 22 " " " 4:45 " "

Monday " 23 " " " 1 " "

1 hr + 35 min. ought to be added to each of these; as train is now due at Alamogordo at 4:30 A.M. El Paso 6:55 P.M.

25

Nov. 21 Saturday

The streets of Alamogordo are lined with cottonwoods 5 to 6 in in diam. & 15 to 25 ft. high. They are planted along the irrigating ditches which I run down on both sides of each street.

The leaves of the cottonwood have nearly all turned yellow, but most of them are still on the trees.

White sands show sand dune formation clearly & the surface is rippled everywhere.

Took a number of pictures. In one plate taken in view of yucca (narrow leaf - see fruit & leaves) & another picture of yellow composite shrub - on which I also found

fungus (Pyrenia?) on white sand. The most common lower plants are the narrow leaf yucca (see fruit & leaves), the yellow composite shrub

(See fruit & Pyrene.) a gray
sage brush the winter
Chenopodium shrub, others &
in more protected places the
gamma grass, & other
small plants (few).

Traced roots of summer low
Yucca, exposed by wind, for
2-5 ft. No end.

Was told that a white rattlesnake had been
found on the white sands. - Albino -
The sands are shifting eastward.
Winds are not very heavy, at least
strong winds are not frequent.
Skeletons of people, animals & birds
in the white sands are occasionally
uncovered by the wind.

Some very light hominid bones have
also been found there.

My driver, Mr. Eugene De Mier, Mr.
R. B. Bannum's brother-in-law has lived in the
territory 18 yrs. & is full of plain lore.

Met Judge Parker at hotel.
Wanted to be remembered to Prof.
Currier, also Dr. Smith, Mrs. Reilly.

^{Sunday}
Nov. 22. Drove E. to mountain.

Took pictures etc. The pine-
saw (dark) treelike shrub
with thin & short ^{red wood} skeletal leaves
& little berries in some
dense ^{red wood} hollow with very large
Opuntia which struck me as
new. (See wood, berries & leaves
spec. of shrub)

Saw a Paisano skulking under
brush up the cañon.
Went up Alamo cañon about
three miles. Collected a willow(?)
oak, etc. etc.

Returned about 4:30 PM. Packed &
wrote letters.

Found cover of Pinus ponderosa ^{and pine} and
Abies douglasii that has been
washed down the mountain, but the
fine drift shows no signs of shells.

Nov. 23-Monday. Got up early & packed. Left for Cloudcroft at 8:30 AM.

Arrived at Cloudcroft at 12:20. Took pictures enway, & at Cloudcroft.

1. The large central tree in open - is *Abies douglasii*.

The very large tree only partly in - is *Abies concolor*. The smaller one beside it is *Pinus strobus*.

One with house is *Pinus ponderosa* (several).

The fine forest is *Pinus ponderosa* & *Abies douglasii* & *Abies concolor* with ^{some white pine} *Bark* with cracks far apart in *Pinus ponderosa*.

Smaller tree = white pine
Very large bluish-topped tree beyond RR cut = *Abies douglasii*.

Ponderosa tree - water tank = *Abies douglasii*
Very rough bark - trunk widening below = *Abies douglasii*.

Those with track are certainly *Abies douglasii*.

No. 1 in *Abies concolor*?
The bark of *A. concolor* is not so rough.

Mr. ^{E. J.} Dedman is one of the Cloudcroft residents. The others are:

A. J. King, E. M. Harter -
~~W. H. Long~~, J. A. Eddy.

The pictures enway up were taken between ~~High Rolls~~ & Woolen. They were mostly snap shots. - The conifers are *Pinus* - (*Pinon*), *Juniperus* *pachyphloea* & *Juniperus* (*virginiana*?). - The water tank & engine, train (log cars) was taken at Woolen.

I found *Hale's* most common under fallen gnawing asp, of which quite a lot grows just below Cloudcroft. The log train came in at 3:40. The logs were all *Pinus ponderosa*. Train left Cloudcroft at 4 PM.

At Bailey's Camp the mountain sides are almost bare, but stumps show that much timber was cut.

In some places above fires destroyed much.

Reached Alamogordo at 6:45 PM, - delayed a little by a derailed log car on our train.

The day was beautiful. ^(compared above to good weather as other leaves were dead.)

Nov. 24 Left Alamogordo at 6:45 AM. 2¹⁵ hrs. late. Reached El Paso at 9 AM.

Took pictures at the Stanton & cars at the Stanton & Tr bridge. View down Stanton tr. & Franklin M.

Left El Paso Nov. 24 at 6:55 PM. - in 1903.

Reached Santa Rosa at 6:22 AM, Nov. 25 - 1903.

This was Mountain time. Left Santa Rosa at 7:35 AM. Actual time

Nov. 25 Wednesday. Reached McPherson, Kas. a little after midnight - about 1 AM.

Nov. 26 Took W.P. train for Salina at 8:25 AM. Reached Salina about 10 AM.

Left for Wilson at 5:30 PM. Train 50 min. late. Reached Wilson, Kas. on main line of W.P., at PM.

St. Joseph, Mo. Nov. 29-1903

- I. Exposure just above Francis river
 C.B. & Q. depot is at the end
 of a ridge lower than the
 high bluffs back from river.
 It shows the hard, somewhat gritty
 light yellow color characteristic
 of the loess, & shows its other character-
 istics. Laminations are plentiful, some
 rounded, some following roots &
 slender, & some in lines &
 some one of these sets of
 bands follows what
 appears to be a surface
 produced by sliding.

~~Some nodules follow line~~

Iron tubules are rather few &
 mostly all vertical.

The nodules & shells were taken
 in a bank extending vertically
 12 ft. above RR. which is here about
 18 or 20 ft. above the river.

shells marked ^{no} R.

Shells & nodules extend up as high
 as I can see.
 Few are found lower down & a
 good many are covered as if there
 had been slipping.

(The great sandbars opposite
 show signs of drifting down &
 wind is moderate.)

In one place where a face (slipping)
 parallel to face of bank scales off
 lime plates extend up & down
 parallel with face in what was an
 old crevice.

Farther N. the bank becomes
 18-20 ft. high & a sort of
 irregular shell band runs
 up so that I got a ^{marked} L.
 box of shells (tin) about 12
 ft. above RR. There are plenty
 of nodules in this part.

cut. I

shells

RR

1st fault
R.

[illegible]

In places, especially at y,
the loess looks quite red
but just next to it, on west
ridge or bluff, loess is yellow.
Probably 25-35 ft deep on
these bluffs.

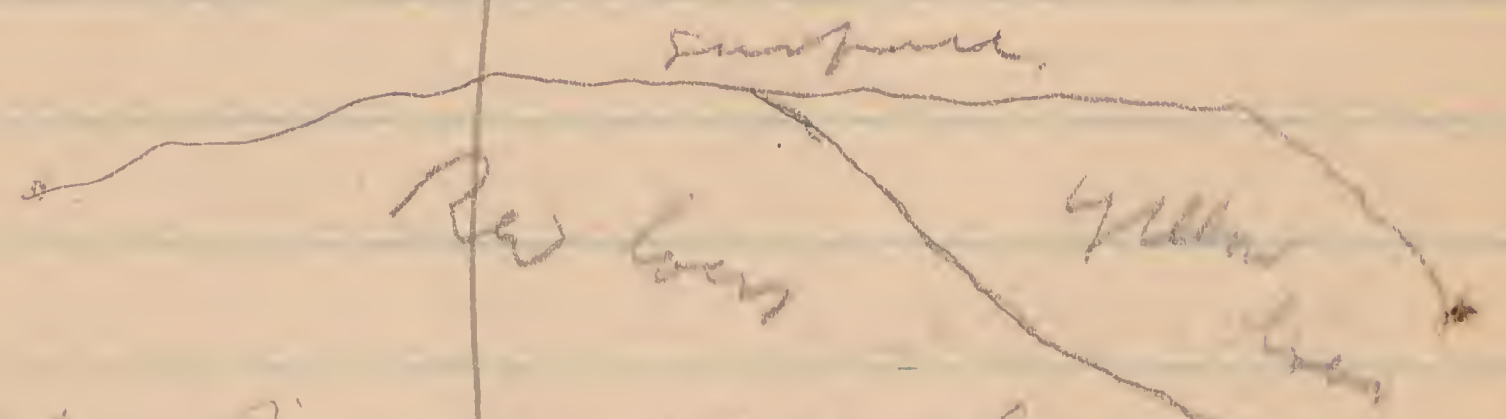
The upper part is vertical,
with talus below as usual.
The upper part also shows
that crumbly "granular"
structure pretty generally.
Ribs of plants very abundant
everywhere.

Graptolites to be seen.
Some of them lie right on
rock y - especially at y,
but none are large.
Small boulders (few) mostly
dark (limestone).

One dark reddish boulder
(not Sioux quartzite?) measured
over 4 ft in diam.

VII.

On a bluff below X. The red
& yellow loess occupies the position



The line is quite sharp
the lower red contains more
irregular finer nodules & the
yellow some rounded nodules &
a few fossils.

See samples of clay
Red & yellow

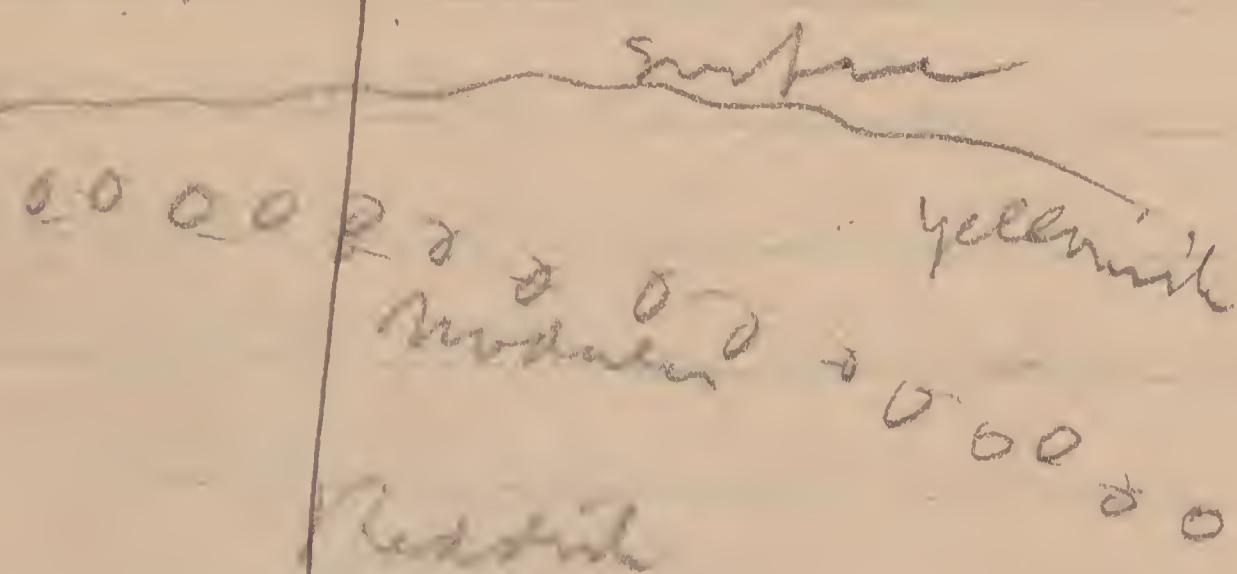
See shales from yellow

The fossils from the yellow
layer were taken at a point
about 15 to 16 ft above RR
track.

Some portion of the bluff above
only red loess. Other only
yellow & these have fossils.

V.

Below 2 on one bluff from
reddish brown underneath +
layer of large nodules, &
then a finer, yellower
loam.



The difference is not so
marked as in preceding
cases.

Some are fairly & some of this
in the great bluish loam.

A closer look shows no
difference between upper &
lower part of this & it is
all probably to be covered
with red loam - but is
lighter than 1st can.

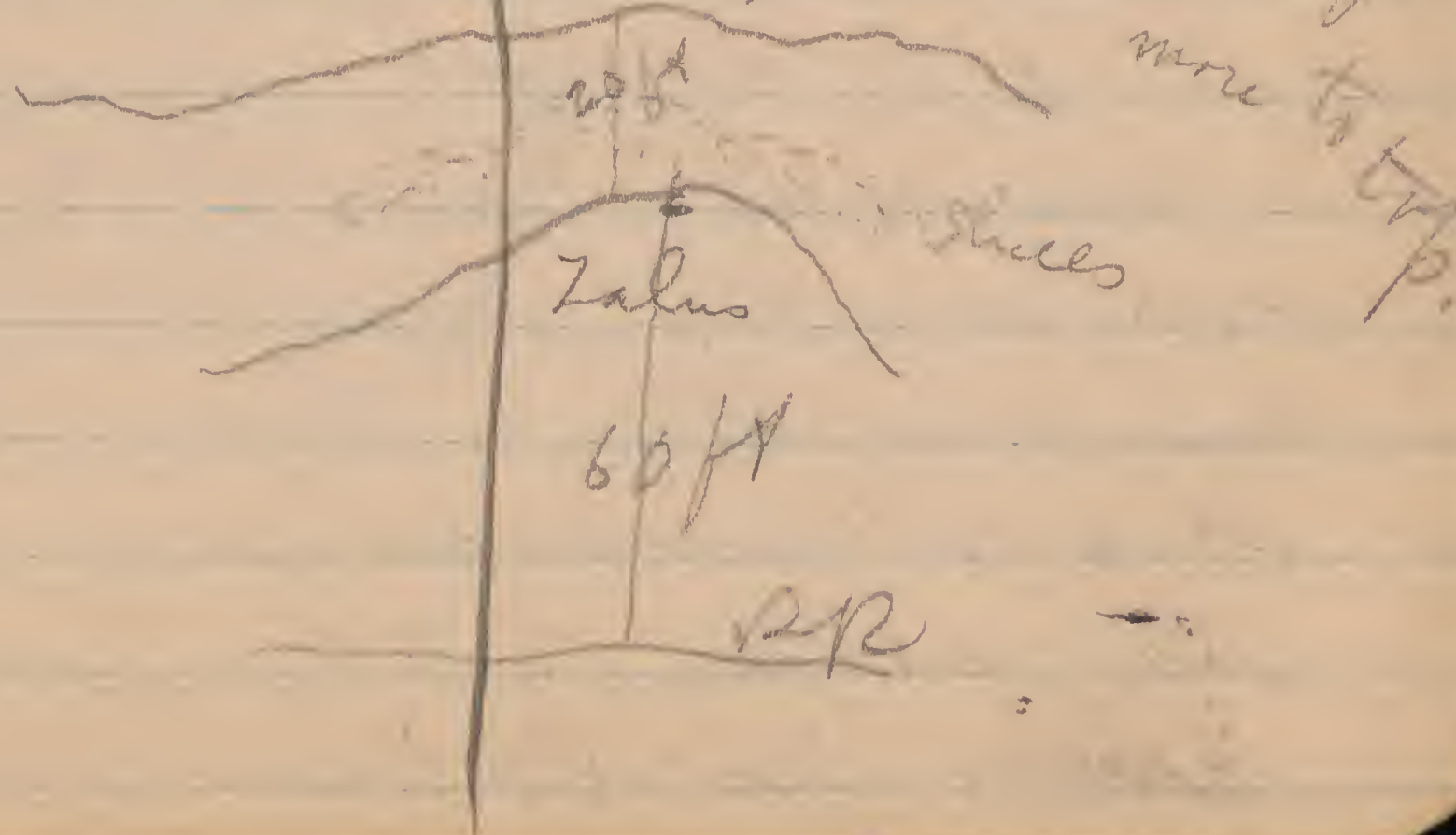
The high bluff out in
are yellow (light) (not blue)
loam, (see sample m) but
they contain scattered fossils
& round nodules. (See spec.)

The upper part is vertical for
18 or 20 ft & then slopes
irregularly along a talus.

The shells are scattered through
a layer reaching to within a
few feet of top & nearly to
bottom of vertical part.

Easy through 10 or 15 ft - but
there is no sharply
defined shell layer.

It is 60 ft (by barom.) from RR
track to shells, & about 20 ft
more to top.



The main part of this bluff along lower part of crescent, highway, is like at m. & contains more or less fossils. I got the fossils at m either by digging, or on freshly exposed vertical surfaces. ^{cut III} A little below m - the first bluff shows light yellow loess in vertical part, & fragments in talus show shells, though I could not walk back. Below is very abrupt talus of reddish (iron-fossiliferous as far as I saw) loess which grades below into fine sand, - 20 ft or more of it.

cut II.

At m just at curve, the red loess extends to bottom of cut - no sand, & the upper loess, 20 ft or more shows vertical face &

^{many nodules} fossils exposed. Could not reach them.

Below Francis str the bluffs recede, & indeed there is just a gradual slope away back east, but a couple of miles below St. Joe. I could again see headlands along the river.

The sand bar opposite St. Joe must be at least 3 mi. long & over a mile wide in widest place & all day clouds of dust & sand were raised above it. The wind blew from the west & a little N.W. & the dust would be carried in line with the headland below the city. If the wind was from the SW the dust would be heaped

up along bluff which
 I worked.
 The stream here is divided
 into several channels
 the main one being above
 Francis's depot.
 of the C.B. & Q. R.R.

It appears to me as if there
 had been a sand dune formation
 along the river above Francis's str.
 and that upon this a deposit of
 dust (red loess) was formed while
 conditions were still unfavorable
 to good mesophytic vegetation;
 that later this vegetation got
 a hold, & finer loess was
 deposited, ~~engulfing~~ covering
 the snail shells which now
 protrude. In most places
 along the face of the bluffs
 there is no very sharp line
 of demarcation between
 the red & yellow loess,

but in the one instance
 specially cited & figured
 this line was very sharp.
 This would suggest that
 for the most part the change
 from xerophytic to mesophytic
 vegetation was gradual,
 but occasionally abrupt.

Occasionally the shells in
 "shell stratum" (here not definite)
 are crushed, as if there had
 been vertical slipping.

The vegetation on the hills
 is tufted, & of the same general
 character (& species!) as
 at Hamburg & at
 Council Bluffs.

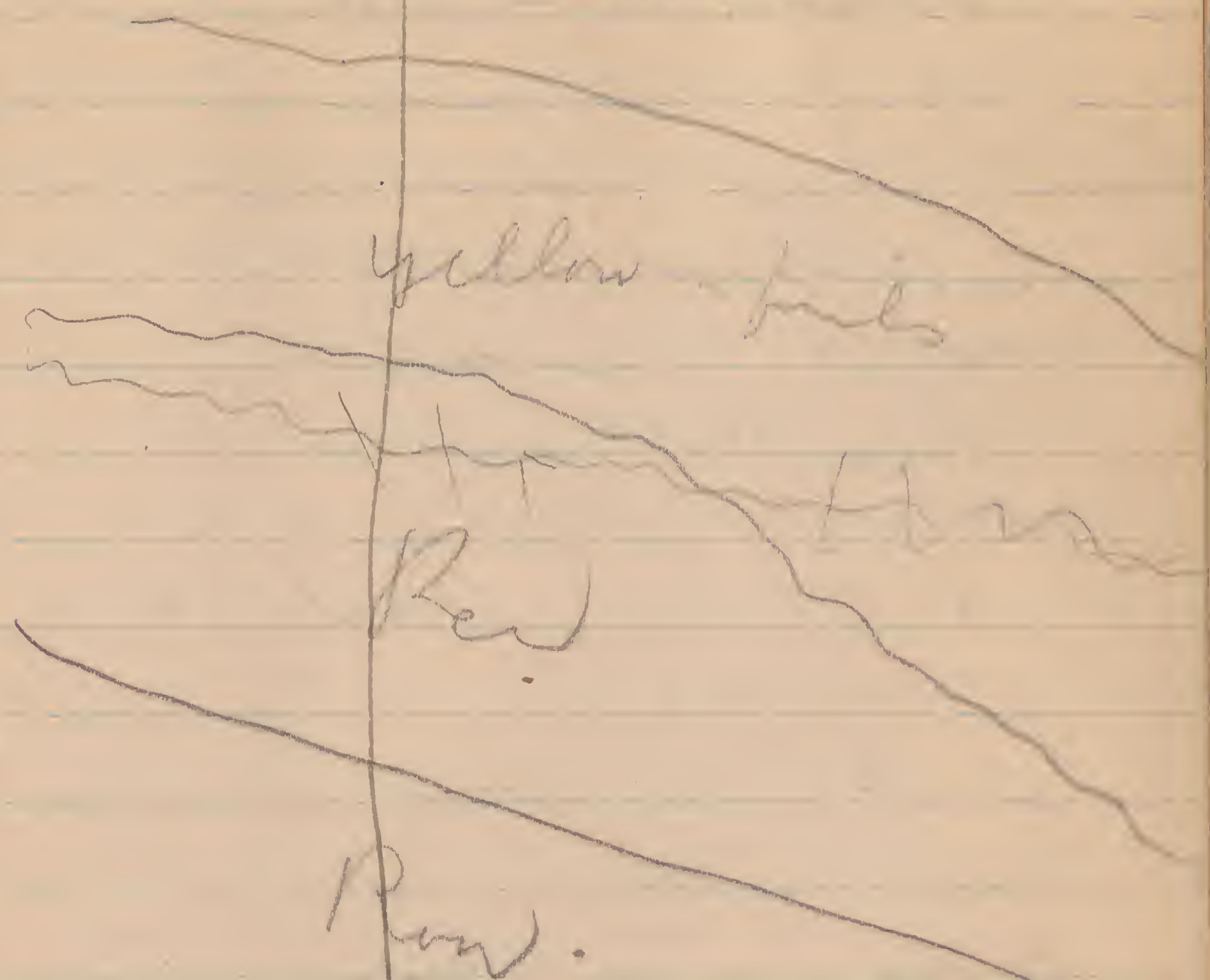
44 St. J. Mo
cut where Isadore str.

crosses my ridge.
Road 70 ft. above
C. & W. tracks.
Banks stand 25 ft. higher.
The yellow loess takes up
all of cut, which is about
1/2 block long. It contains rather
shells & rounded nodules —
just like my higher shell
layers along river.

XI Down on the slope — a
block east (75 yds or more)
at about 30 ft. above C. & W.
tracks — there is yellow
loess even now loess — the
finner with fossils & round
nodules — the latter

The great western
tracks are probably
5 or 10 ft higher
than C. & W. tracks.
This is a guess, but they are higher

45
N. mile N.
Isadore str.



No sharp line between

This cut is just W. of
Dewey ave. which
runs at foot of it

Took Obs. W. ER for Des Moines
at 2:30 PM. Nov. 27-1903

Along C. & W. RR.
saw bridge piers - low
hill - high set. with
numerous exposures ^{with} ~~low~~
down however, along
this RR.

There is rough country
along creek which RR
follows.

As we approached
Savannah I could see
drift in the small cuts
(there are no large ones)
the country was less
rough, & there was
little loss in top.

Savannah is 11 mi. from
St. Joseph.

Between Savannah & Weyeth
there are small cuts some of
which show only drift (Kansan
& others or thin layer of loess).
The topography is Kansan
& the boulders show it, too.

At & beyond Rea, Mo. I
could get a wider view
of territory, & it is
decidedly Kansan.
Cut shows loess -
one showed rather fine
drift and a couple of
feet of loess, with a
dark brown band at base,
less than a foot.

48

49

72

To & from St. Joe & Kansas City
 Mo. Pacific - p. 238 - 69 mi.
 Burlington R. p. 166 - 63 mi.
 " p. 165 -
 Chicago Great Western p. 95 - 69 mi.
 Santa Fe - p. 169 - 31.2

Lansing
 A. T. & St. Fe. p. 186 - 204 (p. 200)
 Le. Kansas City 34 mi. an. Lansing 5 mi. an. Leavenworth
 4.20 PM. 6.55 PM. 7.10 PM
 9.45 AM. 11.20 AM. 11.45 AM.

Kansas City N. Western - p. 237
 Le. Kansas City 26 mi. an. Lansing 5 mi. an. Leavenworth
 7.45 AM.
 4.20 PM. 5.44 PM. 6.05 PM.

Union Pacific p. 120-133
 Le. Lansing 5 mi. an. Leavenworth
 5.20 PM. 5.35 PM.
 11.40 AM. 11.57 PM.

73

225
 89
 156

St. Jos. & Des Moines 121
 156 mi.
 Chicago Gr. Western - p. 272 - 156
 Le. St. Jos. * 2.23 PM an. Des Moines 9.05 PM
 * 2.05 AM 8.30 AM
 Le. Leavenworth an. St. Joseph
 Chicago Gr. Western - p. 95. no.

Santa Fe 20 mi.
 Le. Atchison { 9.50 AM.
 6.45 PM an. St. Joe { 10.35 AM.
 7.35 AM.
 Le. an. Atchison
 33 mi. 8.20 AM. 10.20 AM.

Kas. City 239
 In City, Kas. 323
 562
 M.C. Long.
 421 Cypress St. 277
 349

Le. Wilson an. Kas City
 1.05 AM. 7.50 AM.
 8.54 AM. 5 PM.

Le. Galien an. Wilson
 (500)
 4.40 PM 7.40 PM
 6.40 PM

74

75

Chilopsis saligna - "willow"
Pinus edulis Eng. - Pinon
 " *ponderosa* Dougl. Yellow Pine ^{Ball}
 " *cembroides* Griseb. White Pine
Pseudotsuga douglasii Carr. Douglas Spruce
Juniperus pachyphloea Torr.
Clematis drummondii T. & G.
Berberis trifoliolata Moench
Argemone platyceras L. & O.
 " *mexicana* L.
Silene laciniata Cav. var. *greggii* Nutt.
Larrea mexicana Moench & Greene ^{Creosote Bush}
Koeberlinia spinosa Griseb. ^{very spiny} Junco
 or *Adolphia repens*
Munzadia speciosa Engelm. Mex. Buckeye
Acer grandidentatum Nutt.
Robinia neomexicana Gray
Prosopis juliflora DC. Mesquite
Prunus salicifolia HBK.?
Cercocarpus parviflorus Nutt. ^{Malvaceae}
Rosa foliolosa
Cucurbita foetidissima HBK.
Xanthium canadense Willd.

Mammillaria micrantha
Echinocactus longispinus ~~Griseb.~~ ^{var. *centropus*}
Opuntia arborescens - Cholla

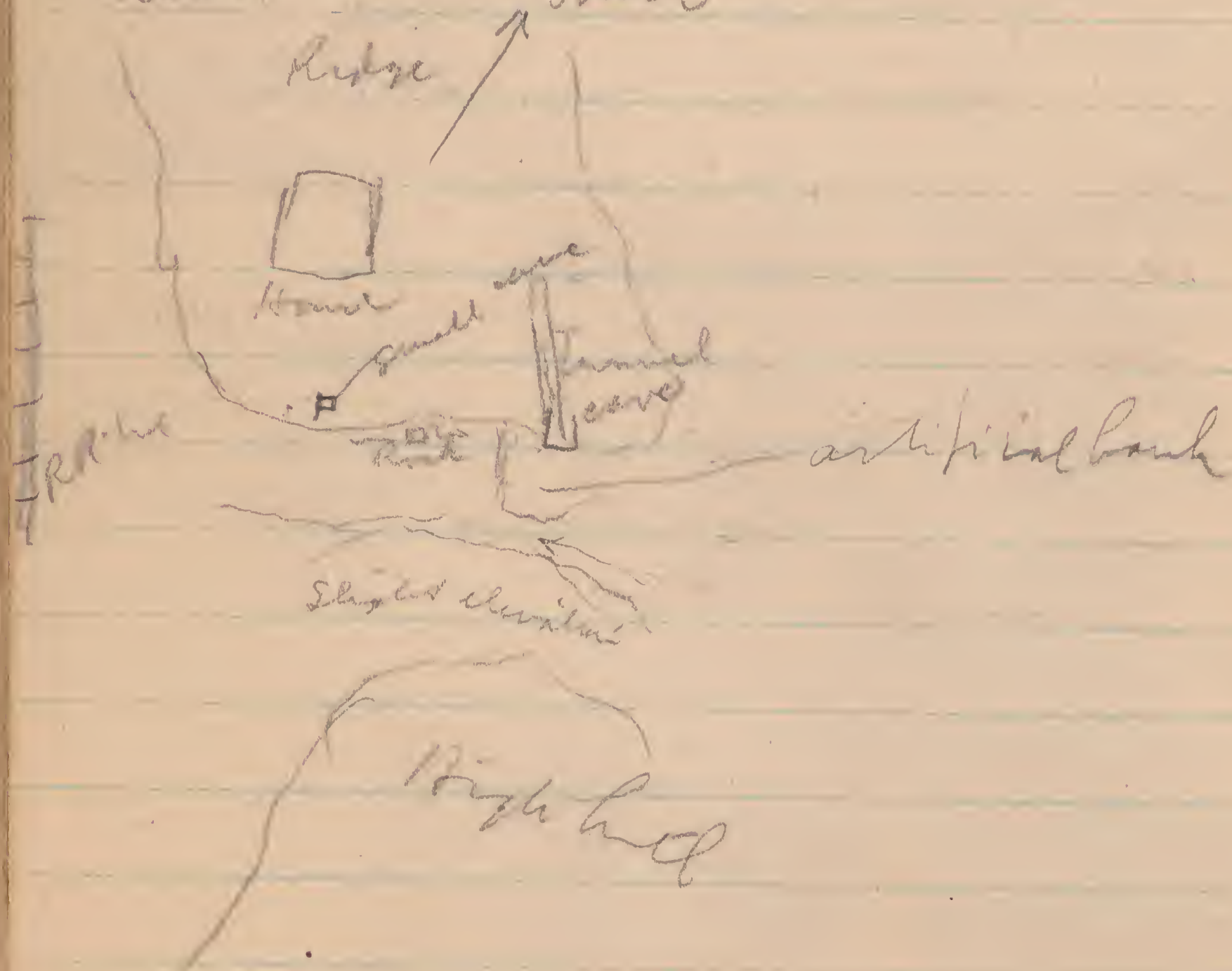
No. 9- view from Trunk looking
NW.

No. 10 is looking W. E. from
platted ridge.

- No. 15- view looking nearly S. cave to
right & old small cave to left,
just below house.

~~No. 16- view from~~ N. E.

- No. 11- close view of cave & rock looking
nearly with South



- No. 12 Taken looking S. E. Cave is
right under house.

No. 7- looking E. of S. E.

" 8- " E. of south- from house
about 100 ft. high.

River is at least a mile E.
The valley is 4 or 5 miles wide.

The water in 1903 was about
Symphon's cabin occasionally called
Buck Creek by common.

The water was nearly 100
feet over RR bridge just
east of cave-creek.

Cave is about 75 yds from RR
Highest point of Conemaugh
river S. is about 150 ft
or more.

As to possibility of water being held & forming the silt layer in the cave - there is a low ridge or slope on the N. side of little creek, while the creek is up against side of valley. The creek cuts in here & it is probable that the barrier extends across mouth of valley. At any rate, with ridges of clay on either side it would be very probable. There has evidently been slipping on both sides.

Wagon station - Oct 16
 1st of green etc.

X

2-3 ft yellow soil

1-4 ft black loam with yellowish brown part & small bits of iron

20 ft yellow, gravelly & sandy layer

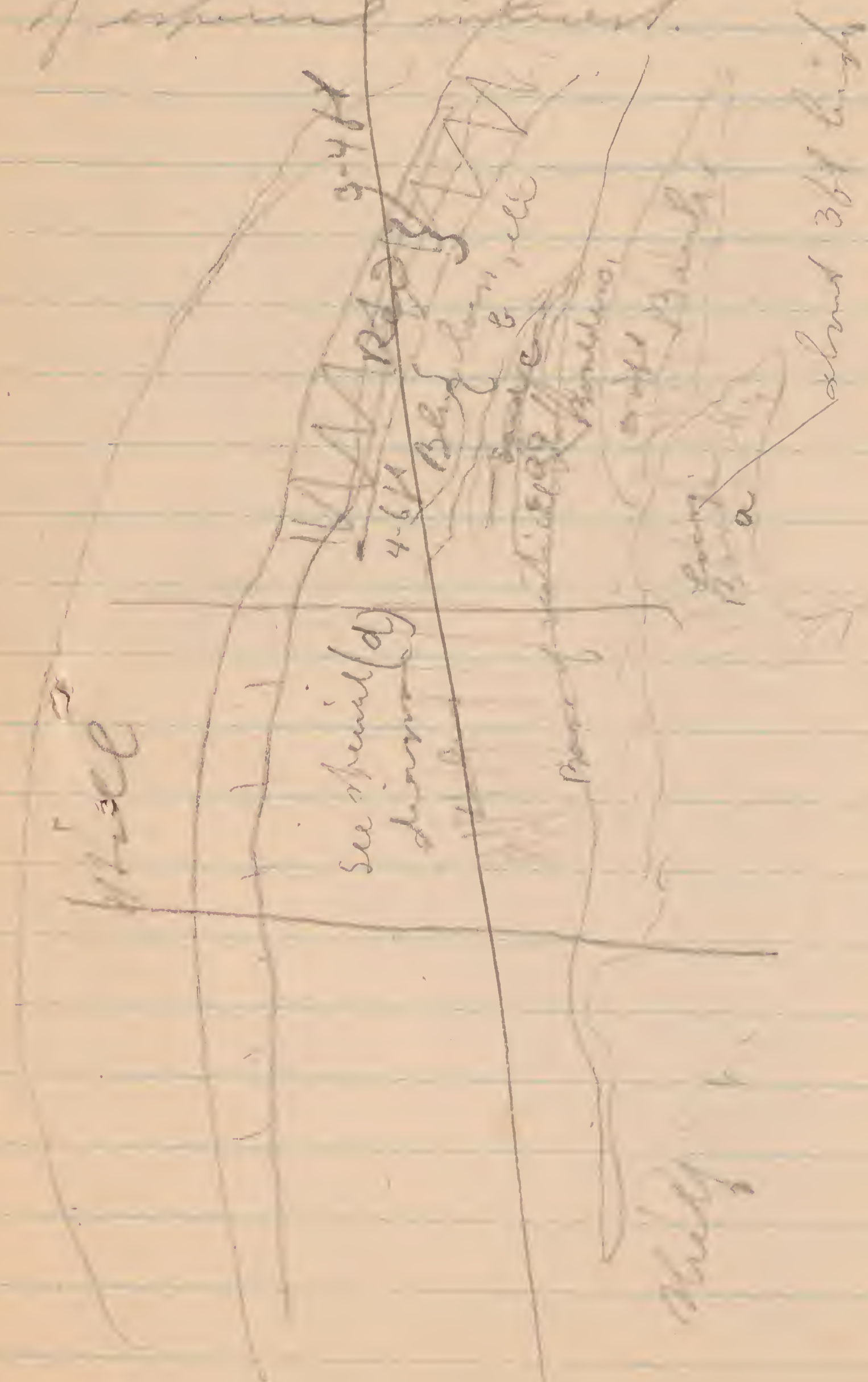
oxidized iron or clay above

about 20 ft } Blue clay with small boulders.

Ransom

part of horse track in cave.

X The next bluff west,
facing Hershey Ave., is
of especial interest.

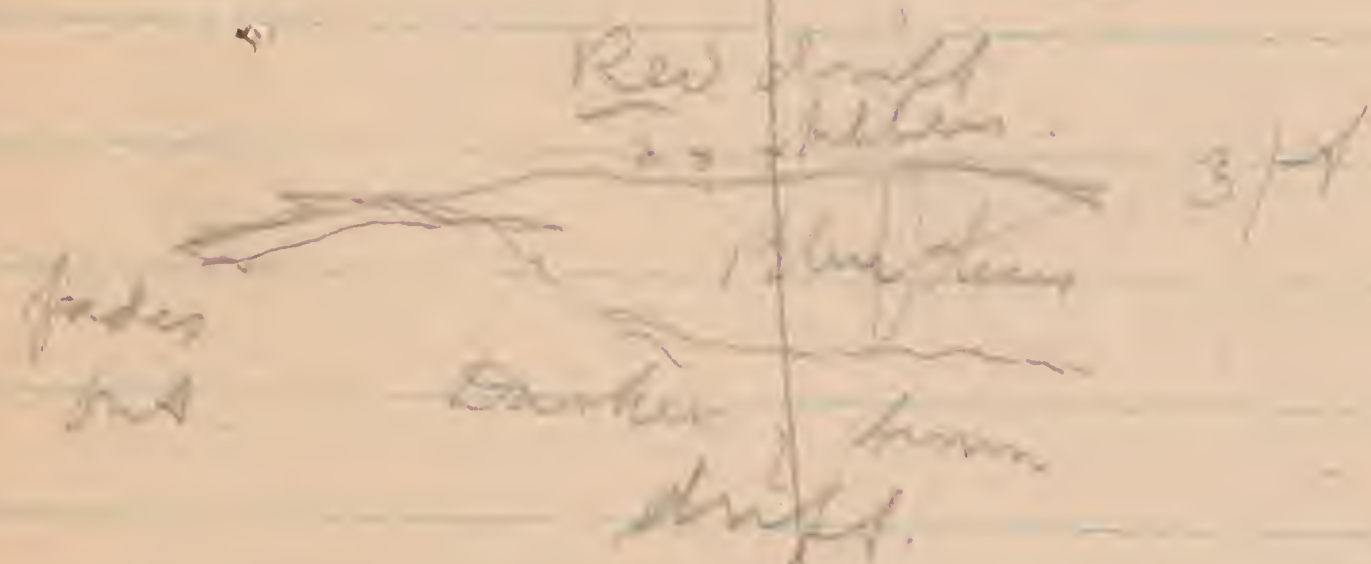


The loess at a is blue (about
3 ft. exposed) with large iron
blotches & streaks, & the shells
are in places in windows,
as if heaped at edge of
pond - A very few pebbles
occur here, & there are
lumps of loess free from
them, & where gravel &
sand appear, it is in
streaks - This is on a
bit of shelf. Beyond
it the main bluff has
drift at base. For
one place there is a pocket
of sand (c) & parts of this
have a little clay. In the
I found most of the
shells marked (c).

The deposit (b) is hard
heavy clay, but like
(a) is more like joint
clay. There are shells in
it & red clay bands, with

pockets of sand.
 The drift between the
 two loess is red with
 iron & contains boulders.
 The topmost layer is
 redder than loess, is
 mostly sand, some
 pebbles & is more
 shaded into yellow weather
 sandy soil.

At (d) the section looks
 like this:



The two drifts are here
 very clearly separated
 by loess. On the shelf
 (a) The loess is again below
 2nd loess - but safe - as

this is probably marginal
 explanation, but it
 appears as if there had
 been an old Kanran
 loess & the Illinoian had
 blown over it & then
 either another loess, or
 loess got some elsewhere,
 was piled on top, & then
 loess -

The lines here are not
 very sharp, though
 oxidized bands occur.

Photo

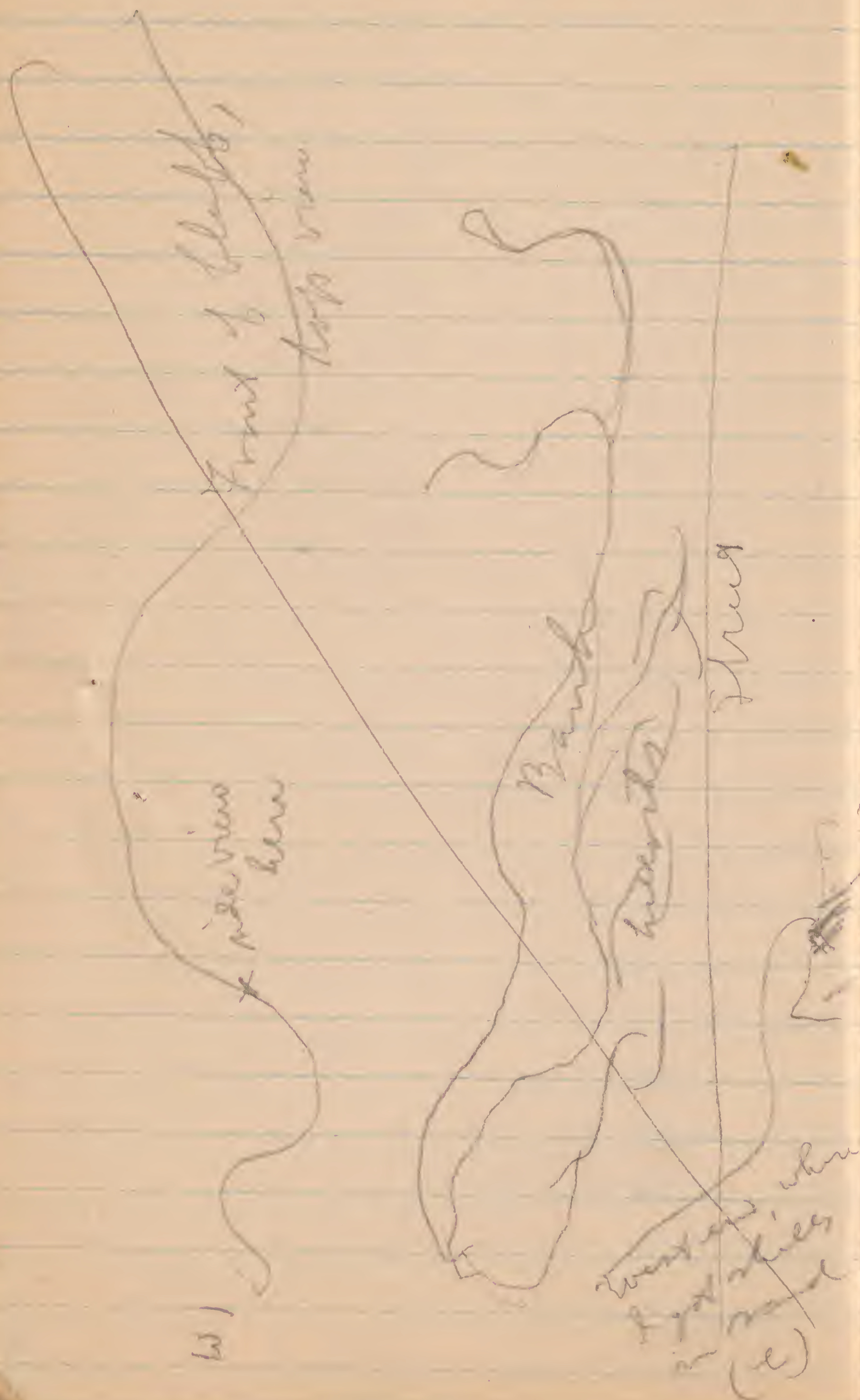


Boulders occur in the
 loess, especially (a)

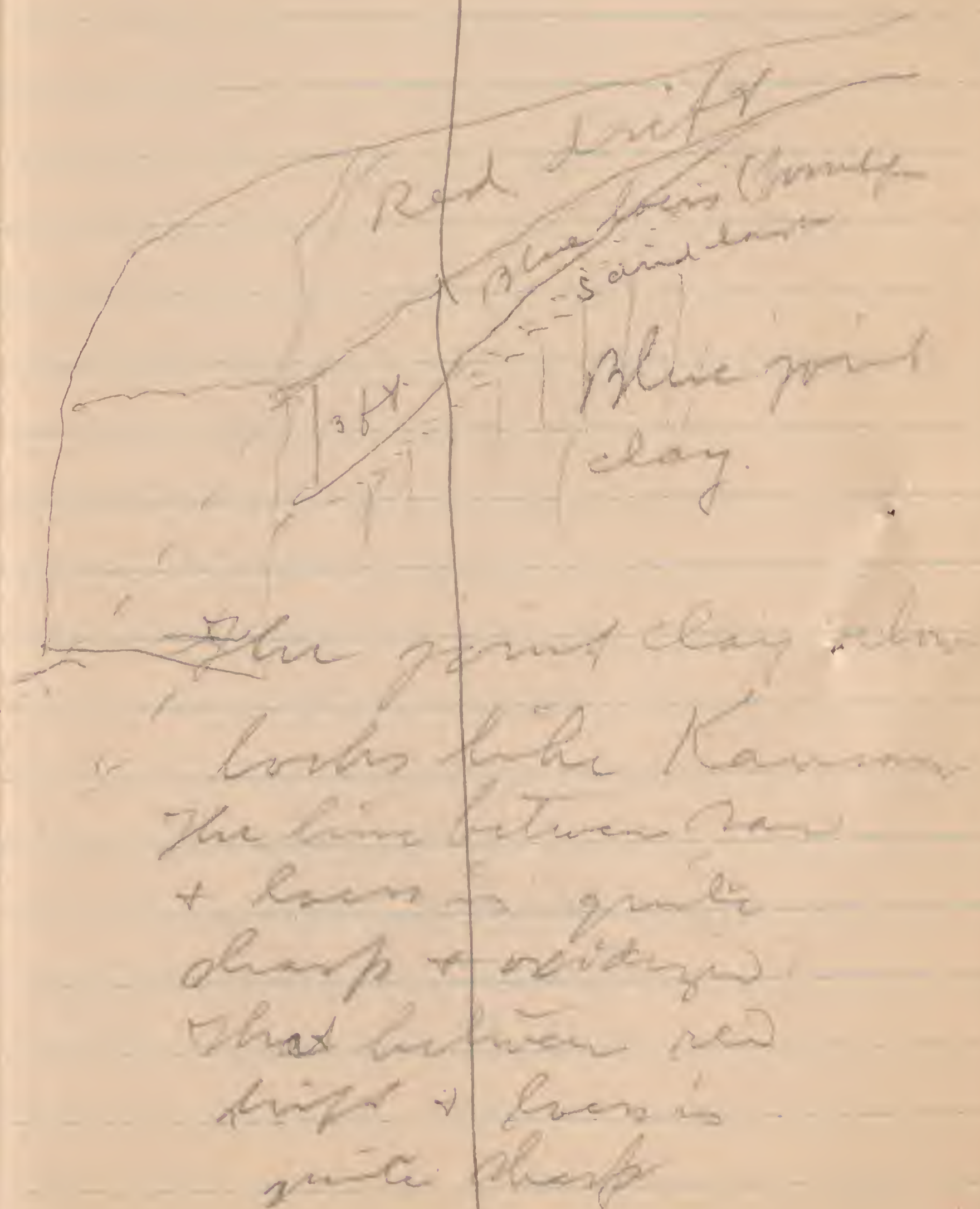
Tridacly (a) is same
as (f) all along
of the gridges of the
is very well marked
As (f) there is a
curious loam-like
layer, rather bluish
yellow, but none of
the latter, more or
less stratified & tougher
than loam &
more like joint clay.
It looks as if it was
associated with water.

The core of the
hill seems to consist
of bluish joint clay
with lots of iron

E



X shows sand & drift below, then loess (blue fossiliferous) & then red drift.



That these materials
appear down as shown
in trans section is
shown by comments

Side view

lenses
oxidized zone
blue lenses, fine

The band of heavy stuff
above oxidized layer in
(1) looking up it had
been overwashed

oxidized
surface
overwash
blue lens

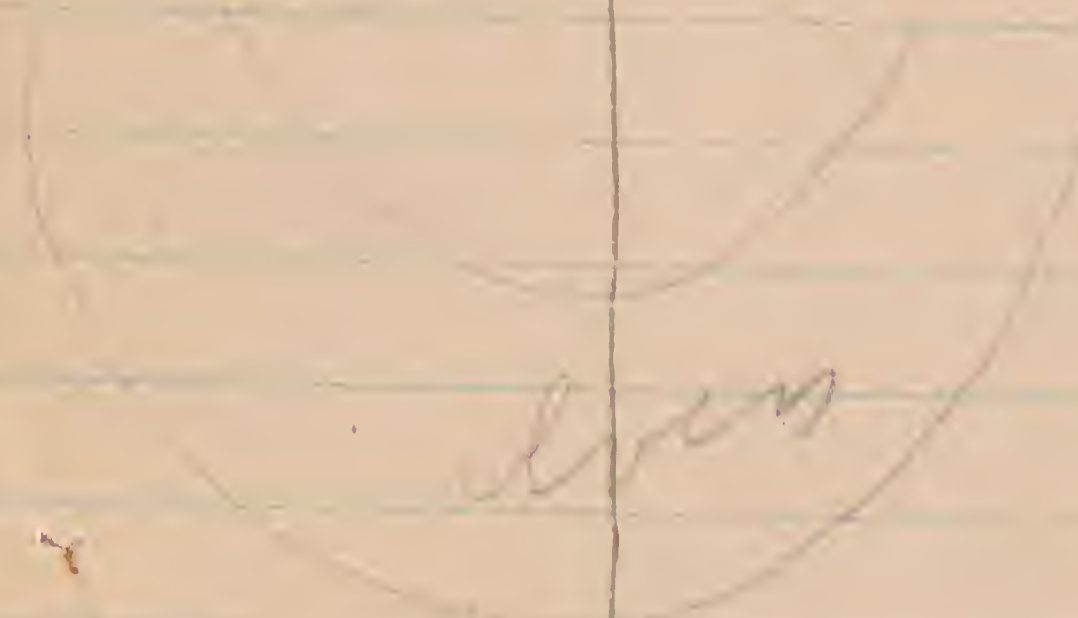
The little bank
at (a) is like
this

original surface
Red dirt
blue lens
part of it washed
with heavy
oxid. zone
Kamanduff

The layer belly at
(c) seem to correspond
to low low oxid.
belt at f.

at least (about) shells
are often in layers &
many broken - also
many limon.

It is evident that
around the hill was
a layer of layers, &
now when part



cut away at E. end
it appears as if
there were two limon.
The two limons
at E. end (see preceding)
are like this
(looking E.)

Red dirt
blue limon

joint clay
of red

Red dirt
blue limon
joint clay

The limons are
especially in
oxidized layers &
above it & they
are all through
this exposure.

The sandy pockets at
either end may have
been sand dunes
on the Kansan.

94

Blue loess at (d)
in main section -
(see shells.)

This is continuation
of layers a + b,

next day - Oct 17th

The bluff at W. end (photo)

shows line between
drift & loess sharp,
but no fretto -

There is fretto in
drift below loess.

Few shells higher up, &
these lam? -

The buried loess at (d)

has irreg. bands of
iron oxide & these
have occasional small
gravel & a little sand

95

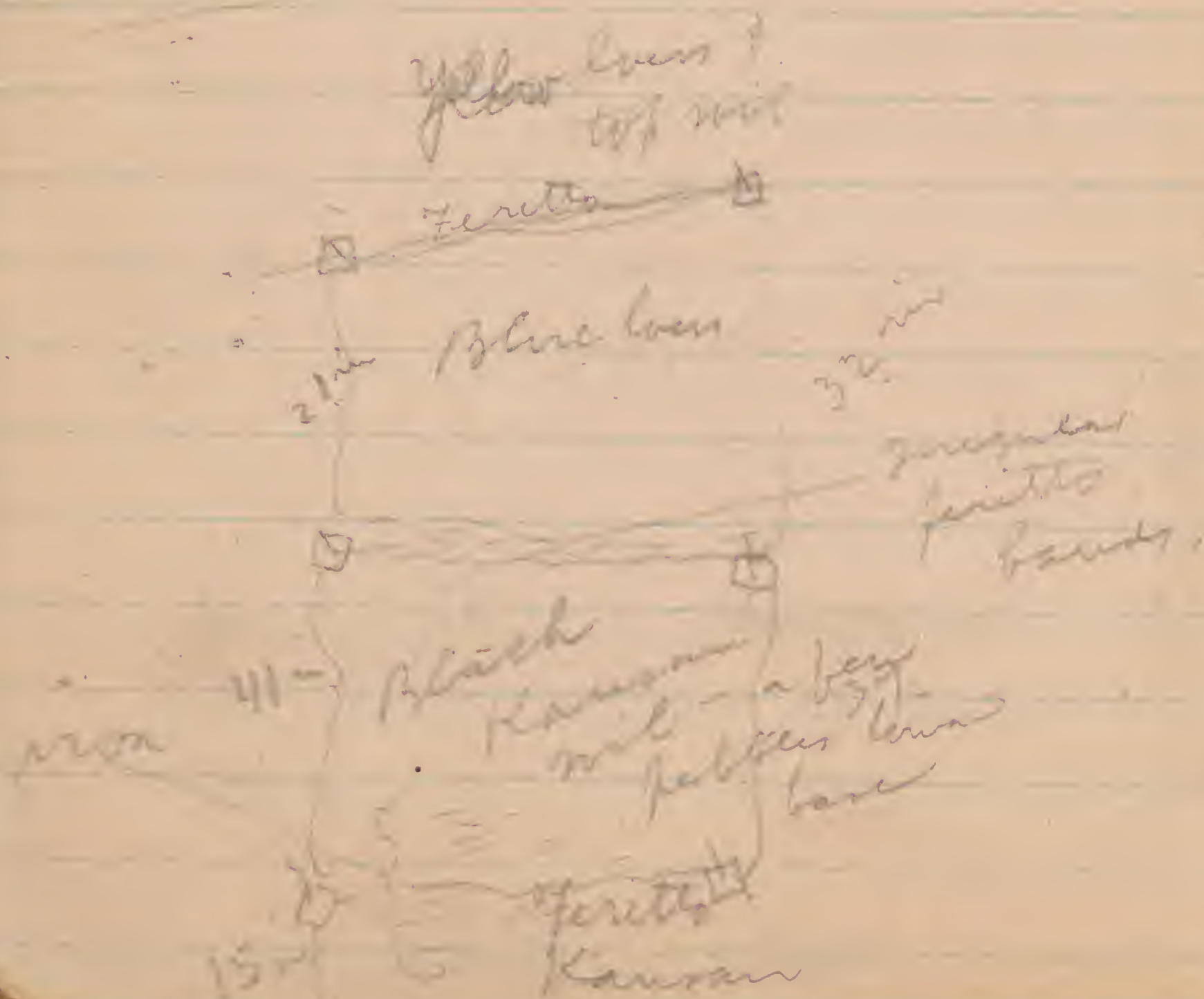
96

97

Road running N. through
middle of sec. 20, Twp of
Albert, Scott co.

Oct. 18 1904 -

1st cut, not far n. of S.
line sec. 20 shows only
yellow ("dwan" loess) - No
fossils, no boulders or shales
2nd cut on lower (middle)
slope of a ridge - shows
following (see photo)

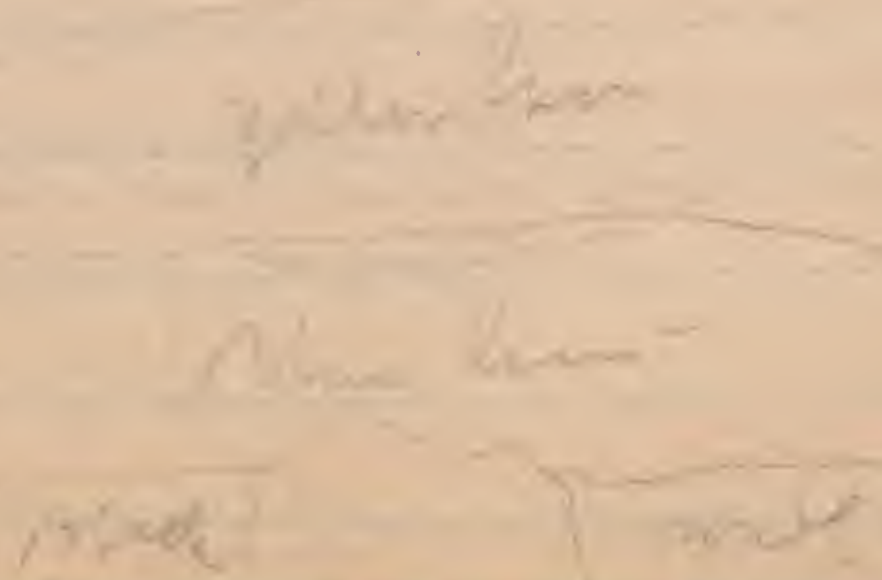


Iron tubules as photographed
in the loess & in black
soil beneath them are
many linear nodules.

Drift below is quite
pebbly - marked here are
several samples of yellow loess,
blue loess, black soil
(Kansan) & pebbles from
drift.

The several ferritic
zones are more or less
indefinite, the sharp part
planes being between the
two loesses & in others
between old loess & black
Kansan soil.

No fossils -
see section (see photo)

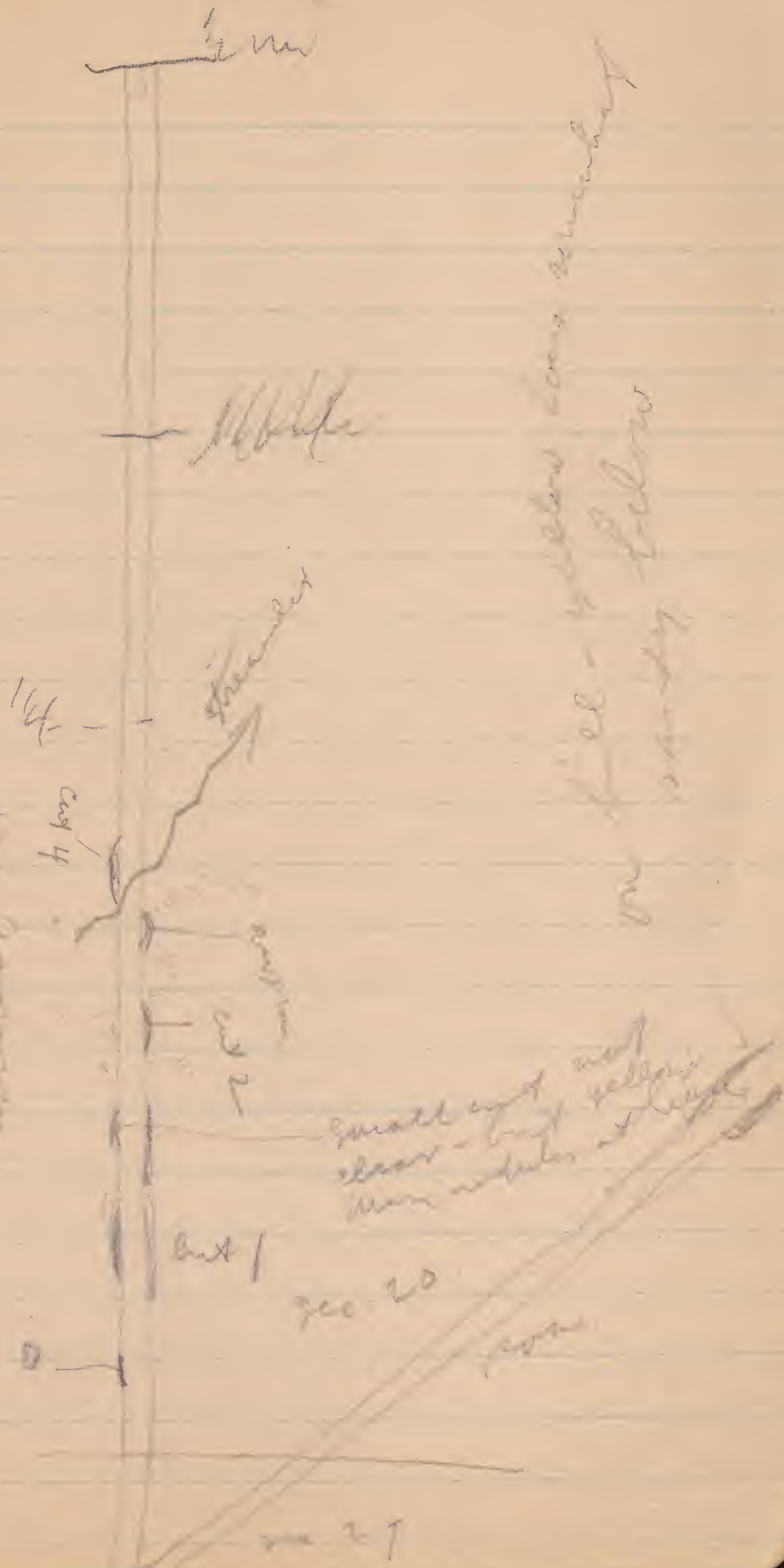


There also fine nodules in blue loess

cut from, slope up N. from creek, shows about 8 ft. of yellow loess on blue loess, - of which less than a foot shows. Both denudated and jointed.

about 150 ft. of S. line sec. 20, on W. side road at Subscript's sale on gentle down slope to N. there is a little yellow loess - 3 or 4 ft. - mostly massive, & a further a strongly oxidized layer, with a little blue loess nodules below it.

Road through middle of sec. 20 - 21 - 22



The blue loam is
typical, tough,
& the yellow is below
a sharp faulted
zone is mostly
evident.

Sound loam is
boulder on top of
hill (on loam)
off crest.

How easy to cover them
I have been found
The yellow loam is
about 4-5 ft deep &
1 ft of soil.

unshale are.



North side
low ground

S.



N

Off Crest are a
cut for new street
shows yellow loam
above, then blue loam,
its upper part with many
tubules or nodules, &
free of fossils - no
knips

at x a streak of blue
 loam (typical) about
 1 ft deep, but it looks
 as if yellow loam was
 below it again. This
 lower yellow loam is probably
 overwash.

The sandy stuff at y. is
 about same sand in part,
 & is more or less
 laminated.
 In cut there is yellow
 loam above it.

at cor of Jersey Ridge
 road & Eddy St. Davenport
 (where car turn)
 facing W. is a
 bank like the

2-3 ft Red - loam?

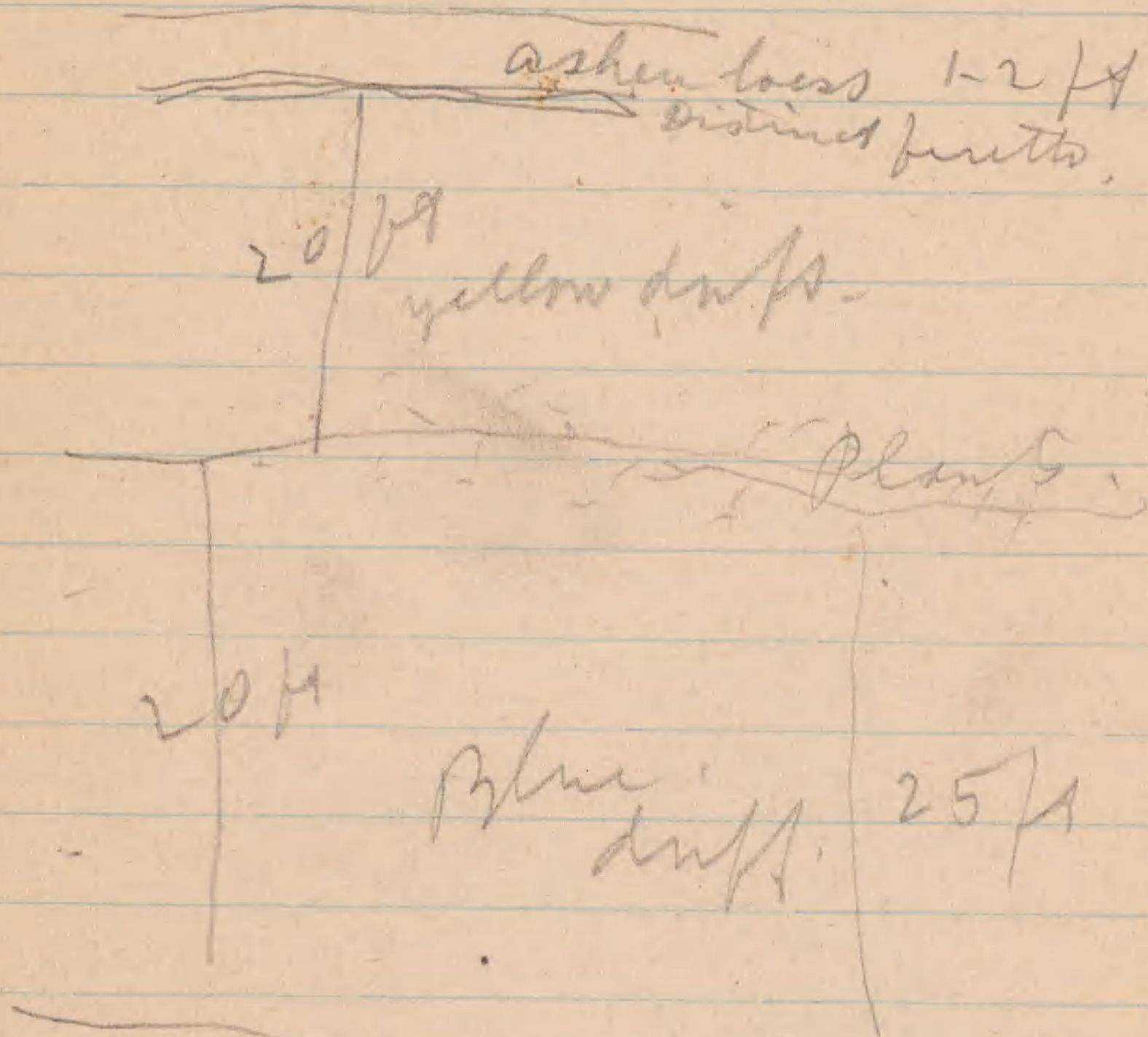
4 ft sand (loamy-like)
 better than 2.

6 ft { Blue loam - streak
 of it pure blue -
 some yellowish -
 mostly tubular
 plant life

sand
 laminated, etc

110

N. side ^{the} ~~Harrison~~ W
of Harrison



I found shells in
 overwash from loess, —
 none by digging except
 in loess.

111

Oct. 22-1904

Road to Plover

a) 12 exp. N. of road W.
of CR 1 & P.

Loess

Road

The loess is thin, not
compact, doesn't weather
(crumble) & has many
fossils. Sheds up
into yellowish & at top
lime, bluish yellow. Fossils?
A few fine bones & also some
insects.

b. Small exposure showing
only upper yellow loess
no fossils. A few roots
most of which are in road

c. Smaller a 1/2 mi. W. of
N. S. road

d - Is a cut on E. slope down
to ravine E. of Plover
The upper 2 or 3 ft. is yellow
loess no bone.

The rest is blue, - more
porous, & full of iron
tubules & a few nodules.
But tubules very plenty &
fossils abundant.

Limestone occurs

The change is rather abrupt
from yellow to blue
loess - in 3-6 in.

The upper part has
much iron
in road.



Partly covered with grass
& shrubs.

are a trail for
 many shown beneath
 even below - covered
 with iron above - 1 ft. or so
 yellow on top - 2 ft.
 no fossils

At (Q) there is a gully at
 head of ravine, N. of road.
 Several cuts are here
 showing but everywhere
 blue lies underneath
 yellow on top. No
 pebbles & no fossils -
 about 100 N. of road,
 & on W. side of ravine
 a little side ridge has
 drift exposed - it is
 quite pebbly below, grades
 into blue joint clay on top &
 this has a few small
 pebbles & on that are
 about 2 - 5 ft. of yellow
 loess -

in low, just W.
 creek & just below
 it.

It is yellow

The line between the yellow
 loess & the blue drift clay
 is fairly distinct, - just 2
 or 3 inches -

I found no trace of fossils
 in any of the loess.
 Near bottom of ravine & near
 road (just where it reaches
 bottom less than 100 ft N. of
 road, I found a little
 of the blue joint clay
 with a few small pebbles
 exposed.

A little nearer the road
 & several feet higher
 was real blue loess -
 lime nodules & tubules, & a
 few fragments of shells -
 Scavaria dentata only (see spec.)

114

116

at 1 - a true
section shown
from below -
with iron at

a tree that is a little
yellow brown -

The whole business is
stamped, & overgrown
these are higher points
near all the blue stuff -
This place is (I no doubt
has been for a long time)
scanned by insects at
the head - Unsafe
to judge unless very clean
and active

g - near road N.E. & on N. side
of main run -
yellow brown at top &
a little blue shows
at foot of slope -
not clear

117

Ch. air rather low, just W
of small creek & just over
12 ft above st.

The upper 6 ft. is yellow
loam - no bones

This runs below into
blue joint clay (see sample)
with small pebbles & coarse

Grains of sand — a
few only — (see sample)

The transition takes place within 3-6 m.

in just west of little creek
about middle of section
2 to 6 ft. deep cut

2 to 6 ft. deep cut
yellowish
River

Buchanan
Burdigala about 2 ft.
or more thick
gravel below into
Burdigala

upland floor
Burdigala zone
long.

The loess is yellow, non-
fossiliferous & looks like
loess.

The line between it & Buchanan
is sharp.

This is a long cut
(estimated 300 ft) that
runs from top to bottom
of hill.

The loess begins a little
below by way up &
is almost horizontal at
its base. —

This shows on S. side of
road, but the section
is better on N. side.

$\frac{1}{2}$ way up the hill there is
a foot of blue joint clay
with some grains of sand —
it changes to loess above
& grades in some places
into Buchanan gravel,
with which it seems to

be closely connected.
The loess is all yellow here
(Dowan!) & there are
no fossils, not tubules,
nor nodules.

Is a small cut (6 ft deep)
all in yellow loess.
On W. side of road only —
5 ft. deep shows

Buchanan gravel &
a foot of loess soil
just S. of the long
hill slopes up to S.
At its base Buchanan
gravel shows, but
above only loess.
The cut is long but
not deep.

Small exposure — yellow loess
2 or 3 ft + 2 or 3 ft blue
loess with tubules but
no fossils —
On N. side road.

120

m - a long cut - up hill
only 2-4 ft deep &
all yellow loam -

becoming more silty bluish
below - no fossils

n - is a low cut 2-6 ft deep
on long hill sloping up to
N.E.

This is same as m
o - is on long hill & shows
same as m & n - except
that at base ^{of the} a little
gravel is exposed.

cut about 200 ft long
& 6 ft deep



all yellow clay, its
interior from base more
coarse - with roots
there are light blue bands
surrounded by oxide bands,
as if bits had been
leached by roots decaying.
There are occasionally clouds
from 1 to 4 ft from top

Iron
blue loam

no fossils

Oct. 23-1904

Sandwich (See photo)
In upper part of
blue layer - for the top,
from fossils - towards
S. end.

They were very faint.
The oxidized band is in
some places divided
making a part between
& all that seems to
be blue layer.

Upper part is yellow
layer (bluish & mottled with
mugle yellow) & is full
of fossils - which are
plentiful $\frac{2}{3}$ of the
way up the bank, which
is about 16 ft high.
About 2 ft of it is
blue layer -

The yellow layer is
less fossiliferous
southward, - the blue
northward.

If only I saw of exposure
was visible I would report
that there were blue
fossils & yellow none.
At center, & northward
the reverse.

The fossils in yellow
layer are not so faint.

The dark part below
(about 2 ft) as it
appears in picture is
rather than upper
part.

A few nodules appear
in upper layer & iron
streaks are abundant
in lower, especially
in its upper part.

The oxidized layer between
the two layers shows

fine lamination - wavy
& irregular, but
parallel.

The same soil extends through both
barren & willow ^{exposed} ~~exposed~~ ^{of} ~~of~~ ^{plains} ~~plains~~
loam is yellow brown & oxidized in

blue loess. In some places a decalcified
core extends into blue loess & is
surrounded by oxidized layers
(see photos)

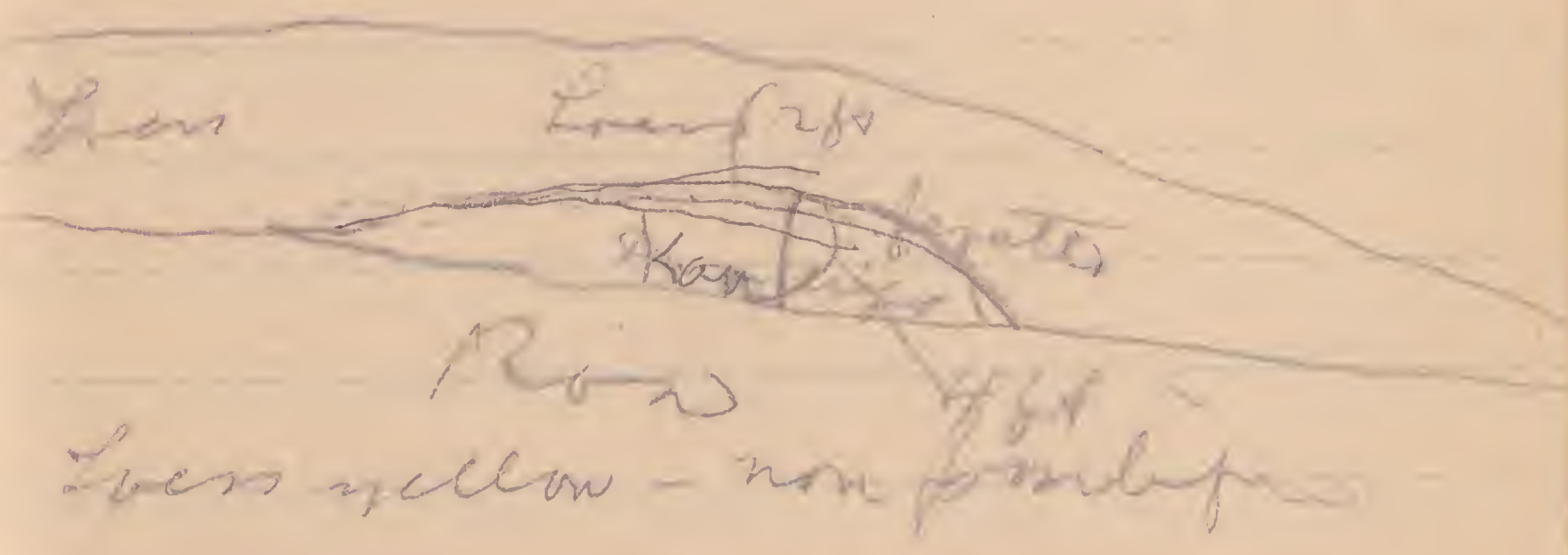
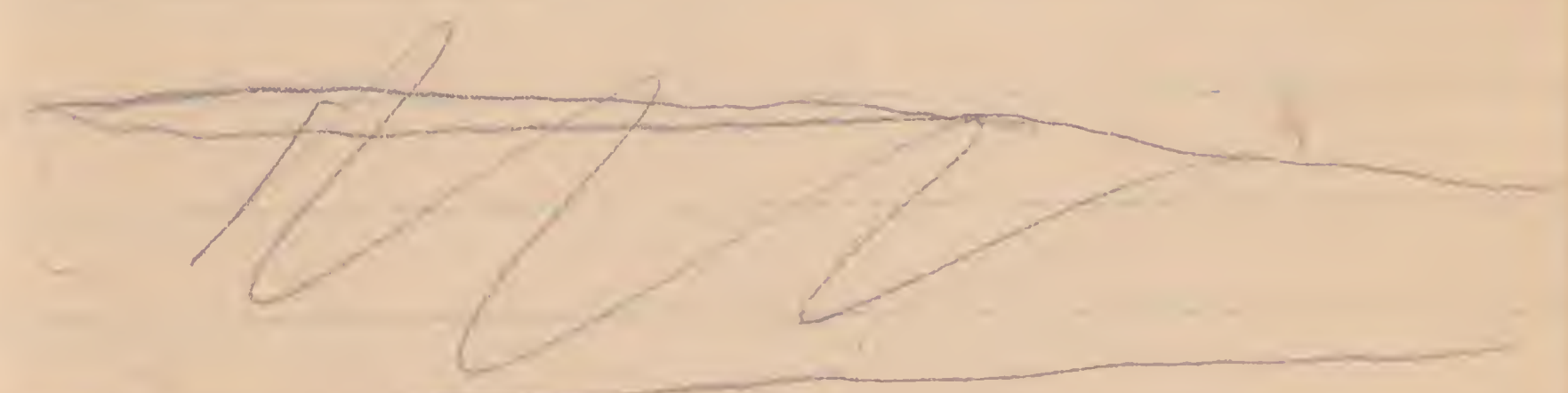
When loam was scraped
up line could be seen
between the matter &
dry part of the loess.
The upper loess shows
streaks of blue (loam)
loess, each with dark
central line (roots)
These blue lines are
usually $\frac{1}{4}$ to $\frac{3}{4}$ in
diameter.

The top 2 or 3 ft. is
lobular & redder than
lower part.

Sod (a black line) 2 or
3 in thick forms a
continuous band, but
below that no black
soil!

(Oct. 25 - 1904)

S.W. - Crown Hill chert
p. - Cut six feet deep on
N. side of road.



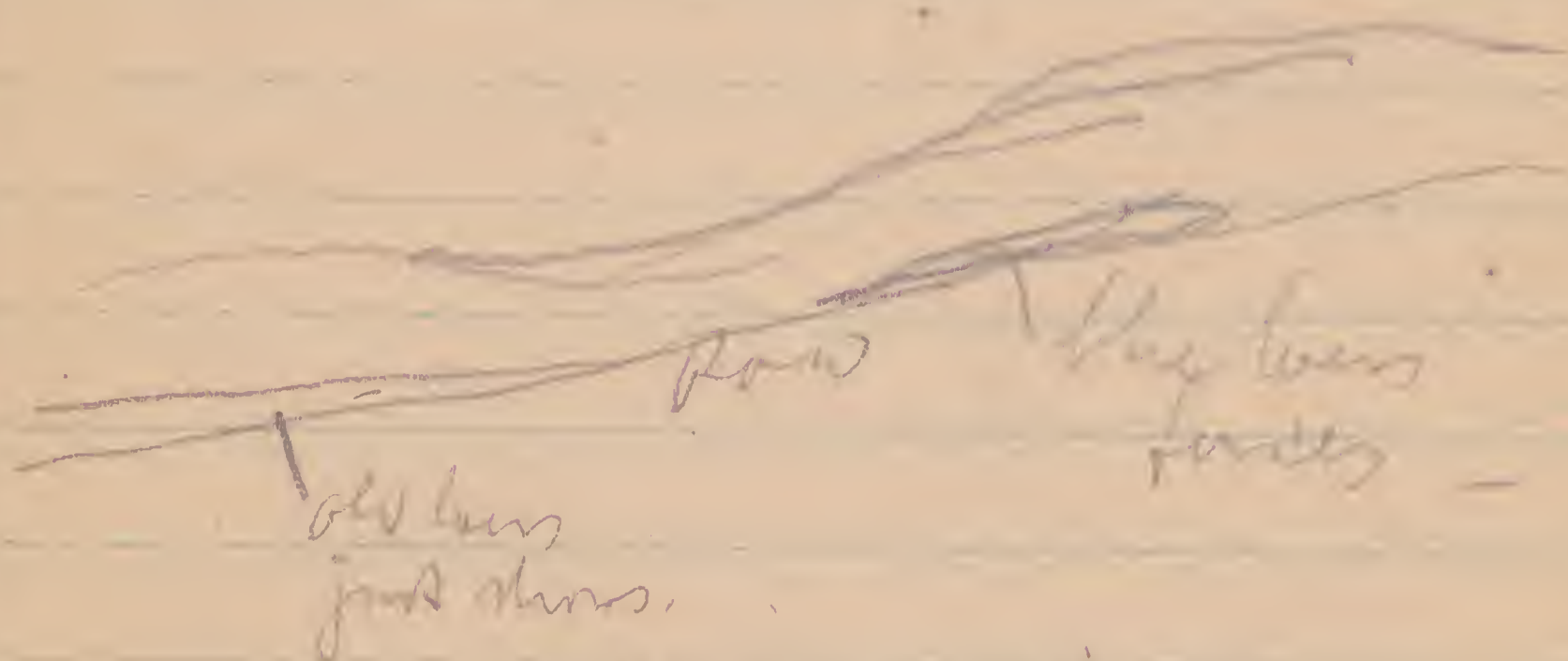
See 20.



at R
(on S. side
belter)
about 5-7 ft.
of yellow loam
one blue loam
variable, but
1/2 way down road to the is high
at base.

at g. on s. side
about 7 ft of yellow
loam is exposed in bank
& at bottom, forming
bottom of gutter blue
loam just shows. It is
full of tubules.
The cut is on a steep slope going
up to sea.

The blue loam shows nodules
& some fossils, especially
on upper slope.



The line between the two
loams is sharp. In
places there are more
tubules near the line.

in other no difference
to line - but change
abrupt.

The blue loam can
be seen nearly to top
of hill on both sides
of road - largest bit
on E. side -
yellow loam - is 4 to
6 ft. deep.

See fossils from blue
loam - some in yellow

at a Toward foot of hill
loam blue to 3 or 4 ft.

Red Buckhorn ground
Masses - this is 2-3 ft
thick & then blue joint
soft below it.

At s. long hill which
shows no loam in lower
2/4 & then blue 3-5 ft.



It is yellow loess & in an
inch or two grades into
Burdwan gravel & this
appears to be 4-6 ft thick
then 1 ft more

Loess has no fossils etc.
At x 1 1/2 - 2 ft of darker
material appears - It is
gravel-like at least &
grades up into bluish
loess - I could not make

out lines clearly, except
that Burdwan is distinct
below.

The line between yellow loess
& blackish gravel which
is within an inch. It
is quite sharp.

There is no blue loess
The gravel has green
of sand & small pebbles -
especially in lower part.
This exposure is badly
thumped but 3 places showed
well.

There is no blue loess but
blue mottlings appear in lower
part of yellow loess.

at t n. of the little streamlet,
blue loess appears below
6 or 7 ft. of yellow loess -
Stumps & grass make it
difficult to observe line,
but loess is typical, with
more oxide at upper part.
Saw no fossils or nodules

The small cuts s. of creek are
not good & only show about
3 or 4 ft. of yellow loess

At u - 4 or 5 ft. of yellow
loess only.

At v on down slope yellow
loess for 6 or 7 ft., bottom
gutter) its lower part
shows horizontal blue
streaks & bands (iron
rust?) - It is badly
thumped & overgrown &
doesn't show well -

forms, rather as tubules.
The upper reddish lobules
never show any sign of blue
streaks.

These cuts are not large, but
being lined, but more common.
At w yellow loess shows for
4 or 5 ft & towards base of slope
(N.) *Brachidium* several shown
at its base.

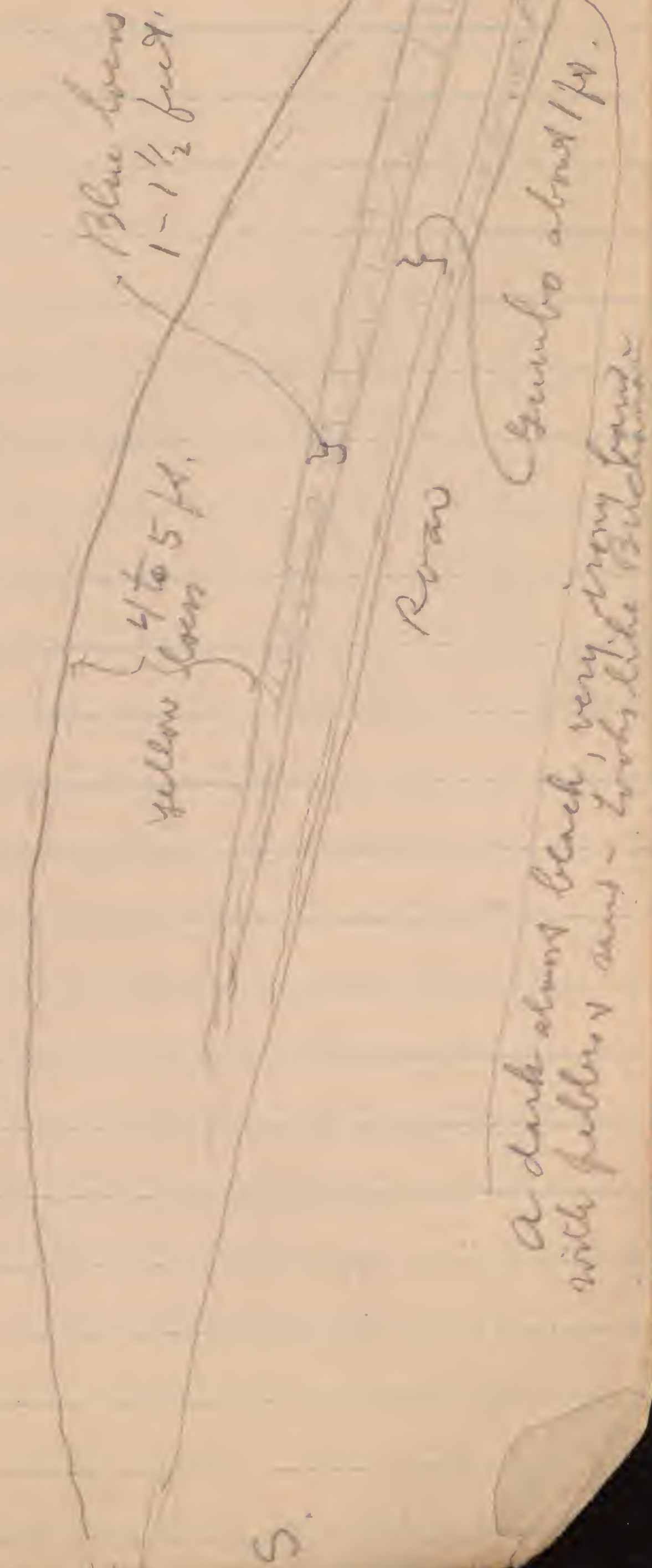
at x there is a long cut in the
hill sloping W. - 4 to 6 ft is
exposed & it is all yellow
loess, but in the lower
part it is streaked with blue
horizontally, & is compact &
somewhat putty like.

The hill E. is not quite so
good, - but similar.

at y - (shows best on W.
side of road) there is
a very interesting section.
No fossils were found, &

I noticed no nodules.

There is a zone of fossils, which
between the two loesses & a very
fine distinct band (= *Brachidium*?)




at 3 there are two small
cuts showing only yellow
loess.

At 4, in sec. 17-79-6- there
is a cut along road-

Near center of sec. 17-79-6
on S. side of road there is
a long cut which in
lower (western) part shows
Machamou (with Kansan below)
at base of bank, then a
foot or two of gumbo which
is capped by ~~yellow~~ yellow loess -
~~rather~~ the line being mostly
rather sharp. Half way
up, but for a long stretch
the slope is gentler, &
here the gumbo grades up
into blue loess (no fossils) &
this is capped by yellow
loess, with oxidized distinct
zone between.

In upper part - near



Road

top of hill, only
yellow loess seems to
be visible.

W.

134

135

136

137

Mr. Eugene De Mier
Alamogordo, N. Mex.

R. E. Banner, photographer

Kearney City

no. 1 - near cor. W. 6th + Washington
on Washington str. E. side of str.
no. 2 - same - different view

140

(Mtl) { View over Plamyards
looking W.
2nd st. of castl - higher Cholla -
Opuntia - m fr.

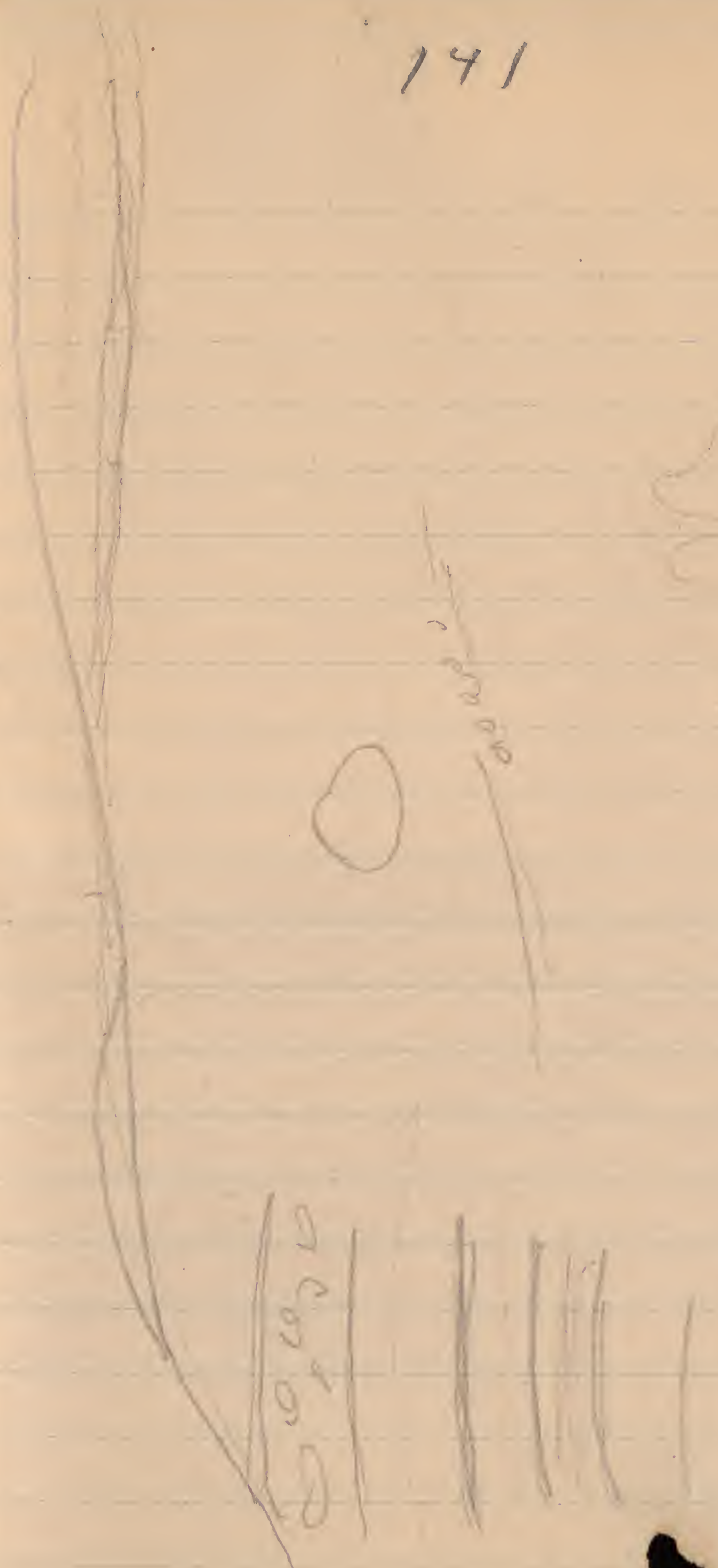
Brownish.

Clouds ft,

A. - Semides mountain

18 - Natural forest (looking toward sun)

141



142

Aug. 27

Breakfast - Columbus Jc. .50

Dinner on train .60

Supper .70

Aug. 28 -

Sleepers^{1.00} Breakfast^{.50} 1.50Dinner^{.60} Paper^{.50}, Paper^{.5} 1.15Supper^{.60} .50

Aug. 29 -

Breakfast^{.45} Dinner^{.70} 1.35Cards & stamps^{.55} Booklet^{.10} .65Carfare^{.30} Soda^{.5}, Basket^{.15} Paper^{.5} .55

Aug. 30 - Alpine

3 meals (team?) 1.85

Aug. 31 - El Paso.

Room^{.75} Breakfast^{.50} Dinner^{.45}, Supper^{.25} 1.95Soda^{.20}, Twine^{.15}, Repair shoe^{.10}, Stickpins^{.1.30} 1.95Street carfare^{.10}, Candy^{.20}

Sept. 1 - Alamosa.

Peaches^{.25}, basket^{.10}Sept. 2 - baskets^{.20}, as cloudcroft(Wings) (4.00) 1.50 lunch^{.25}Sept. 3 Paper^{.25} - Peaches^{.25} Supper^{.50}Soda^{.15}, box^{.15}, Paper^{.50} 7.50

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Sept. 5 - "Meat"^{1.00}, Canned^{.50}, jam^{.10}
hauling box^{.25}Sept. 6 - Breakfast^{.60}, Dinner^{.10}Sept. 7 - Paper^{.5}, shine^{.10}, phon^{.10}, lunch^{.50}
dinner^{.60}
stock^{.25}

Mrs. A. C. Arnold

472 - 12th str

Lime flat.

Manager of Alamosa
HotelKarel is a brother in law
of a daughter in law of
Mr. Arnold

- xx - Snap shot near Stevens
- x - Snap shot at Stevens - no good
- 546 - View in Stratford, Tex.
- 788 - " near " " "
- 13814 - Looking W. at Alamogordo N. M.
- 30, 31 - Views of desert & mts. at Jarilla
- 23, 34 - Views up the Rio Grande
- 12 -
- 16 - Smaller - Looking up from
Pumping Station - close bridge
- x B.B. Leiby
- x B.B. Leiby
- x J. W. Kinsland
- x W. F. Stevens
- v W. W. W. W.
- v L. L. L.
- v F. F. F.
- v W. W. W.
- Yucca (cut down)

Sent RR. check to Miss Cavangh
from Alamogordo, N. Mex.
No. 903 - No. 15543.

748 - Looking W. at Alamogordo, N. M.
 - View of desert (Jarilla)

1448

Sens

1000

1000

1000